

Appl. No. 09/911,034
Amdt. Dated September 30, 2005
Reply to Office action of June 30, 2005
Attorney Docket No. P12877
EUS/J/P/05-6176

Amendments to the Claims:

This listing of Claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A signal transfer point (STP) node within a Signaling System 7 (SS7) telecommunications network serving a particular local switch and further connected to a packet communications network, comprising:

a first interface for receiving a SS7 signal from said particular local switch, said SS7 signal having a destination address identifying a destination node within said SS7 telecommunications network;

a first routing table for determining the routing mechanism within said SS7 telecommunications network;

a second routing table for determining the routing mechanism within said packet communications network; and

a processor for determining whether said destination address associated with said received SS7 signal is specified within said second routing table indicating that a destination node specified by said destination address is routable over said packet communications network and wherein said second routing table includes Internet Protocol (IP) address associated with said destination address specified in the received SS7 signal;

a second interface for communicating packet data with said packet communications network; and

an interworking function module connected to said second interface for encapsulating said SS7 signal within a packet and for transmitting said packet using said IP address over said second interface in response to said determination that said destination node is routable over said packet communication network.

2. (Cancelled)

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3. (Currently Amended) The signaling transfer point node of claim 1 ~~claim 2~~ wherein said interworking function module utilizes Message Transfer Part 3 - User Adaptation Layer (M3UA) protocol to communicate said SS7 signal over said packet communications network.

4. (Original) The signal transfer point node of claim 1 further comprising:
a third interface for communicating said received SS7 signal over said SS7 telecommunications network; and

wherein said processor transmits said received SS7 signal over said third interface in response to a determination that said destination address associated with said received SS7 signal is specified within said first routing table.

5. (Original) The signal transfer point node of claim 1 wherein said packet communications network further comprising:

an address server for maintaining address data for a plurality of communications nodes within said packet communications network;

a plurality of said STPs connected to said packet communications network; and

wherein said server communicates said address data to said plurality of STPs over said packet communications network;

6. (Original) The signaling transfer point node of claim 1 wherein said first routing table comprises a point code (PC) table for said destination address.

7. (Original) The signaling transfer point node of claim 1 wherein said second routing table comprises an Internet Protocol (IP) address table for a particular signaling transfer point serving a destination local switch associated with said destination address.

8. (Original) The signaling transfer point node of claim 1 wherein said first interface comprises a trunk interface with said local switch.

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9. (Currently Amended) A method of communicating a SS7 signal over a packet based communications network wherein said SS7 signal is originated from a local switch connected to a SS7 telecommunications network, further comprising the steps of:

receiving a SS7 signal from said local switch at a signal transfer point (STP) node within said SS7 telecommunications network, said SS7 signal indicating a destination address identifying a destination node within said SS7 telecommunications network;

determining at said STP node whether said destination address indicated by said received SS7 signal is specified within a routing code table indicating that said destination address is reachable by said packet based communications network;

in response to said determination that said destination address is specified within said routing code table, routing said SS7 signal over said packet based communications network using a determined routing code as the destination address within said packet based communications network;

otherwise, determining at said STP node whether said destination address indicated by said received SS7 signal is specified within a point code table indicating that said destination address is reachable by said SS7 telecommunications network; and

in response to said determination that said destination address is specified within said point code table, routing said SS7 signal over said SS7 telecommunications network to said destination node.

10. (Cancelled)

11. (Currently Amended) The method of claim 9 ~~claim 10~~ wherein said step of routing said received SS7 signal over said packet based communications network further comprises the steps of:

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identifying an Internet Protocol (IP) address associated with a second signal transfer point (STP) serving a destination local switch associated with said received destination address within said routing code table;

encapsulating said received SS7 signal within an Internet protocol (IP) based packet; and

routing said IP packet using said identified IP address associated with said second STP as the destination address over said packet based communications network.

12. (Currently Amended) The method of claim 11 further comprises the step of utilizing Message Transfer Part 3—User Adaptation Layer (M3UA) protocol to transmit said received SS7 signal over said ~~product~~ packet based communications network and to support peer-to-peer signaling.

13. (Currently Amended) The method of claim 11 wherein said step of routing said received SS7 signal over said SS7 telecommunications network further comprises the step of said first STP routing said received SS7 signal over said SS7 telecommunications network using said a point code specified within said point code table as the destination address.

14. (Original) The method of claim 9 further comprising the steps of:
receiving an address update packet signal from a centralized server; and
updating said routing code table with data received within said address update packet signal.

15. (Original) The method of claim 14 wherein said SS7 telecommunications network includes a plurality of signal transfer points (STPs), each including said routing code table, wherein each of said STPs further receiving said address update packet signal from said centralized server for updating said routing code table.

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16. (Currently Amended) A system for communicating a SS7 signal over a packet based communications network wherein said SS7 signal is originated from a local switch connected to a SS7 telecommunications network, further comprising:

means for receiving a SS7 signal from said local switch at a signal transfer point (STP) node within said SS7 telecommunications network, said SS7 signal indicating a destination address identifying a destination node within said SS7 telecommunications network;

means for determining within said STP node whether said destination address indicated by said received SS7 signal is specified within a routing code table indicating that said destination address is reachable by said packet based communications network;

in response to said determination that said destination address is specified within said routing code table, means for routing said SS7 signal over said packet based communications network using a determined routing code as the destination address within said packet based communications network;

otherwise, means for determining within said STP node whether said destination address indicated by said received SS7 signal is specified within a point code table indicating that said destination address is reachable by said SS7 telecommunications network; and

in response to said determination that said destination address is specified within said point code table, means for routing said SS7 signal over said SS7 telecommunications network to said destination node.

17. (Cancelled)

18. (Currently Amended) The system of claim 16 ~~claim 17~~ wherein said means for routing said received SS7 signal over said packet based communications network further comprises:

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means for identifying an Internet Protocol (IP) address associated with a second signal transfer point (STP) serving a destination local switch associated with said received destination address within said routing code table;

means for encapsulating said received SS7 signal within an internet protocol (IP) based packet; and

means for routing said IP packet using said identified IP address as the destination address over said packet based communications network.

19. (Original) The system of claim 18 further comprises means for utilizing Message Transfer Part 3 -User Adaptation Layer (M3UA) protocol to transmit said received SS7 signal over said packet communications network.

20. (Currently Amended) The system of claim 18 wherein said first STP further comprises means for routing said received SS7 signal over said SS7 telecommunications network using said a point code specified in said point code table as the destination address.

21. (Original) The system of claim 16 further comprising:
means for receiving an address update packet signal from a centralized server;
and
means for updating said routing code table with data received within said address update packet signal.

22. (Currently Amended) The system of claim 21 ~~herein~~ wherein said SS7 telecommunications network further comprising a plurality of signal transfer points (STPs), each comprising said routing code table, wherein each of said STPs further comprising means for receiving said address update packet signal from said centralized server for updating said routing code table.